# Calculus 1 Workbook Solutions

## Idea of the limit

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## IDEA OF THE LIMIT

■ 1. The table below shows some values of a function $g(x)$. What does the table show for the value of $\lim_{x \to 4} g(x)$?

| $x$ | $g(x)$ |
|---|---|
| 3.9 | 1.9748 |
| 3.99 | 1.9975 |
| 3.999 | 1.9997 |
| 4.001 | 2.0002 |
| 4.01 | 2.0025 |
| 4.1 | 2.0248 |

*Solution:*

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■ 2. How would you express, mathematically, the limit of the function $f(x) = x^2 - x + 2$ as $x$ approaches $3$?

*Solution:*

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$$\lim_{x \to 3} \left(x^2 - x + 2\right)$$

■ 3. How would you write the limit of $g(x)$ as $x$ approaches $\infty$, using correct mathematical notation?

$$g(x) = \frac{5x^2 - 7}{3x^2 + 8}$$

*Solution:*

$$\lim_{x \to \infty} \frac{5x^2 - 7}{3x^2 + 8}$$

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